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**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

05-AMCP-0406

SEP 8 2005

Mr. Nicholas Ceto, Program Manager  
Office of Environmental Cleanup  
Hanford Project Office  
U.S. Environmental Protection Agency  
309 Bradley Boulevard, Suite 115  
Richland, Washington 99352

**RECEIVED**  
SEP 21 2005  
**EDMC**

Dear Mr. Ceto:

COMMENT RESPONSES ON THE FOCUSED FEASIBILITY STUDY FOR THE BC CRIBS  
AND TRENCHES AREA WASTE SITE, DOE/RL-2004-66 DRAFT A, AND THE  
PROPOSED PLAN FOR THE BC CRIBS AND TRENCHES WASTE SITES,  
DOE/RL-2004-69, DRAFT A

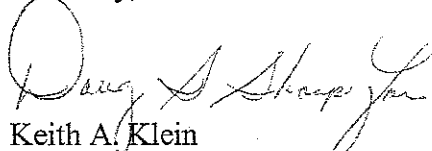
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The purpose of this letter is to respond to the August 4, 2005, "Transmittal of EPA Comments to Focused Feasibility Study for the BC Cribs and Trenches Area Waste Sites, DOE/RL-2004-66, Draft A, and the Proposed Plan for the BC Cribs and Trenches Area Waste Sites, DOE/RL-2004-69, Draft A," received on August 8, 2005. The attached draft comment responses are submitted in accordance with Section 9.0, "Documentation and Records," of the Tri-Party Agreement Action Plan. EPA has 30 days following receipt of the responses to review and provide the U.S. Department of Energy, Richland Operations Office (RL) with a determination as to whether or not the responses are deemed favorable. Once these responses are made final, RL would expect Fluor Hanford, Inc. to be able to update the documents and provide a final version for your approval within 30 days.

The only outstanding issue is the EPA recommendation for partial excavation followed by capping remedy. RL requests continued discussion with the EPA on this issue insuring that worker risk in performing excavation is properly balanced with any environmental benefit of partial excavation. It is RL's hope that this issue can be resolved in a timely and collaborative manner. Please work with Larry Romine of my staff to determine a mutually agreeable timeframe and path forward to resolve this issue.

If you have any questions, please contact me, or your staff may contact Matt McCormick, Assistant Manager for the Central Plateau, on (509) 373-9971.

Sincerely,

  
Keith A. Klein  
Manager

AMCP:BLF

cc: See Page 2

# REVIEW COMMENT RECORD (RCR)

1. Date 8/31/05

2. Review No. N/A

3. Project No. BC Cribs

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5. Document Number(s)/Title(s)

DOE/RL-2004-66, Draft A, Focused Feasibility Study for the BC Cribs and Trenches Area Waste Sites

DOE/RL-2004-69, Draft A, Proposed Plan for the BC Cribs and Trenches Area Waste Sites

6. Program/Project/Building Number

□ BC Cribs and Trenches Area Waste Sites Remediation Project

7. Reviewer

EPA, Letter, R. Lobos to M McCormick, "Transmittal of ...", dated August 4, 2005

8. Organization/Group

N/A

9. Location/Phone

N/A

17. Comment Submittal Approval:

Organization Manager (Optional)

10. Agreement with Indicated comment disposition(s)

Reviewer/Point of Contact

Date

Author/Originator

11. CLOSED

Reviewer/Point of Contact

Date

Author/Originator

12. Item

13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)

14. Reviewer Concurrence Required

15. Disposition (Provide justification if NOT accepted.)

16. Status

1 Proposed Plan, General Comments  
EPA disagrees with the preferred alternative (Alternative 4) of capping for the 216-B-20 through B-34 and 216-B-52 trenches. In our opinion, Alternative 5 provides the highest degree of overall protection of human health and the environment, reduces the risk from principal threat waste more effectively, and is consistent with stakeholder values as reflected in advice from the Hanford Advisory Board in advice #63, #173 (the Central Plateau Remedial Action Values Flow Chart), and #174. This should be reflected in the document.

Disagreement acknowledged. Additional analysis is being conducted to determine when principal threat waste has decayed sufficiently to reduce acute and chronic exposure to certain intruder scenarios below acceptable guidelines. RL believes that Alternative 4 (capping) may be more protective of human health and the environment, overall, than Alternative 5 (partial excavation and capping) because it avoids the certain worker dose and physical occupational hazards associated with excavation, packaging, transportation, and reburial. 40 CFR 300.430 (9) (iii) (A) states that short-term risk is to be considered in evaluation of overall protection of human health and the environment] at the expense of a potential inadvertent intruder risk. Continued discussion between the EPA and DOE is needed to insure worker risk is properly balanced with the potential environmental benefit of partial removal.

2 The EPA concurs with the preferred alternative (Alternative 3) for 200-E-114 Pipeline.

Accepted.

3 The EPA disagrees with the preferred alternative (Alternative 4) capping for 216-B-14 through 216-B-19 Cribs. EPA believes that Alternative 5 is a more appropriate alternative. The streamlined characterization approach used for the six cribs creates uncertainty in the extensive assumptions that have to be accepted. Although the representative site chosen is a crib, there are many differences

See response to #1, above.  
RL believes that characterization of the 216-B-46 Crib provided adequate data to apply to the 216-B-14 Series Cribs, in accordance with the 200-TW-1 and TW-2 approved Work Plan. Section 2.6.2.3 of the FFS provides a comprehensive

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
	<p>between it and the subject cribs which warrant characterization. The B-46 Crib is located north of the BY Tank Farm and is part of the BY Cribs, while the subject cribs are located south of the BY Tank Farm and are part of the BC Cribs and Trenches Area. Although the representative crib received the same waste stream for part of the time, it was not hooked up to the same pipeline and tank as the six subject cribs. It is also noted that the 216-B-46 Crib originally received wastes from 221-B (page 2-61), while the other cribs did not. Other notable differences between the B-46 Crib and the subject cribs are: contamination in the B-46 Crib starts below 15 feet of depth, while the contamination in the subject cribs are 10-13 feet deep; and the B-46 Crib has impacted groundwater and the six subject cribs have not. The selection of Alternative 5 would ease most of these concerns as contaminants can be monitored as the waste is removed, along with removing most of the higher concentrations of contaminants.</p>		<p>discussion of why this crib is representative of the 216-B-14 Series Cribs. While the locations differ, they are both in the 200E Area, which have similar geologic features.</p> <p>Process flow diagrams for the 216-B-46 Crib and 216-B-14 Series Cribs are identical. Both show waste originating from the decladding and plutonium extraction processes associated with the bismuth phosphate/lanthanum fluoride processes in the 221-B/221-T facilities with discharge to B Plant Aggregate Area single shell tanks. Next, supernatant from these tanks was transferred to U-Plant for uranium recovery and subsequent scavenging to remove fission products. The reference to the 221-B plant for only the 216-B-46 Crib waste is an error that will be corrected in the table. That the 216-B-46 Crib is deeper is of minor significance, because its conditions can be readily translated. It is recognized that the groundwater beneath 216-B-46 is contaminated, whereas it is not beneath the 216-B-14 Series Cribs. This distinction is believed to result from the greater relative quantity of liquid discharged to the 216-B-46 Crib and nearby cribs, and because the groundwater is approximately 100 ft nearer the surface. No change to the text is necessary, except to correct the error in Table 2-2 of the FFS and add the depth to groundwater at the 216-B-46 Crib.</p>	
4	<p>The EPA agrees with the preferred alternative (Alternative 3) for 200-E-14 Siphon Tank. However, please note, in FFS comments we state Alternative 5 is more applicable, as the cap for the adjacent sites will more than likely cover this area.</p>		<p>Recommendation to recommend Alternative 5 is accepted, because the cap for the nearby cribs is expected to cover the footprint of the siphon tank. Text will be updated.</p>	
5	<p>The EPA agrees with the preferred alternative (Alternative 3) for 216-B-58 Trench, 216-B-53A Trench, 216-B-53B Trench, and 216-B-54 Trench. However, please note, in FFS comments we state Alternative 5 is more applicable, as the cap for the adjacent sites will more than likely cover this area.</p>		<p>Because the cap associated with nearby trenches will cover these trenches, Alternative 4, Capping, is recommended rather than Alternative 3, Remove, Treat and Dispose (Note: this is a change from Draft A). The protection offered by the cap eliminates the need for any excavation of near-surface contamination, similar to the remedy for the other trenches and cribs. Any excavation performed prior to capping would be inconsistent with the criteria applied to the other waste sites, i.e., Alternative 5, Partial Excavation with Capping, is suited for those waste sites having a combination of deep mobile contamination and near-surface contamination with high potential for remobilization. The low levels of contamination associated with these sites would certainly decay to acceptable levels in a reasonable time period (~325 yr).</p>	

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
6	Implementability for Alternative 5 is shown as "Moderate: partially meets criterion" for 216-B-20 through B-34 and 216-B-52 trenches and for 216-B-14 through 216-B-19 Cribs, but there is no explanation as to why it is not readily implementable. Please explain.		Alternative 5 is certainly implementable, but it is more difficult than capping. The text already states that the excavation portion of Alternative 5 is considered hazardous to implement relative to Alternative 4 being easily implemented. No change to the text is deemed necessary.	
7	For Alternative 4, inadvertent intruder exposures after 150 years of active institutional controls are not within the CERCLA acceptable risk range of $10^{-4}$ to $10^{-6}$ . Please compare this risk to the other alternatives that have contaminants removed.		Accepted. The lesser intruder risk associated with Alternative 5 will be explicitly described.	
8	It appears that remedial worker dose is used as a primary deciding factor in "Short Term Effectiveness," "Implementability," and "Overall Protection of Human Health and the Environment." Please explain.		Potential impacts on workers during remedial action, i.e., remedial worker dose and exposure to physical occupational hazards, is a primary element of short term effectiveness. Per 40 CFR 300.430, overall protection of human health and the environment "draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, <i>short-term effectiveness</i> , and compliance with ARARs. Implementability considers the "ease of implementing the alternatives". While implementable, Alternative 5 is certainly more difficult than Alternative 4. No change to the text is necessary.	
9	The EPA recognizes that it is difficult to implement complete RTD on some of these sites due to the depth of excavation required, but it should be acknowledged that technologies may need to be investigated to properly address the deep technetium-99 and nitrate contamination. Additional characterization is warranted to reduce the uncertainty in the amount of contamination remaining in the deep vadose zone. The FS and proposed plan should describe an updated strategy for how to address this.		Development of technology to immobilize the Tc-99 and nitrate contamination is discussed in both the PP (included in recommendations) and FFS (Section 8.1.4). The explicit recommendation to evaluate soil desiccation will be updated to include the recommendations of the expert panel that met in April 2005.  Accepted. Description of soil sampling to ground-truth the high resolution resistivity (HRR) data obtained in 2004 and 2005 will be expanded. This confirmatory sampling will provide a correlation between the HRR data and Tc-99/nitrate concentrations.	
10	There should be some discussion on the portion of pipeline that is north of Route 4 South. A strategy should be formulated for addressing it. No rationale is provided in regards to why the entire pipeline is not addressed in this proposal.		Accepted. Strategy for the remainder of the pipeline will be expanded to state that it will be addressed in the revised 200-TW-1 FS. It is possible that rebliming of waste sites could place that portion of the pipeline in the 200-IS-1 OU.	
1	<u>Proposed Plan, Specific Comments</u>		Accepted.	

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
	<i>Page 1, second paragraph.</i> Add siphon to tank. It should be consistent with the rest of the document.			
2	<i>Page 1, bulleted paragraph last sentence.</i> Add monitoring.		Accepted.	
3	<i>Page 1, highlighted box, third bullet.</i> Send comments to Rod Lobos (509) 376-3749, lobos.rod@epa.gov		Accepted.	
4	<i>Page 2, second bullet, second sentence.</i> Remove description of the evaluation process and add what the groundwater needs to be protected from, i.e. technetium-99 & Nitrate contamination in the vadose zone.		Accepted.	
5	<i>Page 2, "Overview of the Proposed Plan" at the end of the first sentence.</i> Make a note to see Figure 2.		Accepted.	
6	<i>Page 5, first sentence.</i> The sentence states that there are 16 trenches, but earlier it was listed as 20.		Accepted. Wording has been revised to "The BC Cribs and Trenches Area waste sites include 6 cribs and 16 trenches that received scavenged waste from the uranium recovery process .... Four additional trenches, formerly in the 200-LW-1 ..."	
7	<i>Page 5.</i> The actual contaminated area (acres or another unit of measurement) should be quantified and compared to the non-contaminated area for the BC cribs and trenches.		Accepted. Statement will be added that approximately 10 acres of the overall 36.6 acre area is comprised of individual waste sites.	
8	<i>Page 5, "Scope and Role of Action" second to last sentence.</i> Change "in the next 3 to 10 yr." to "sometime in the future."		Accepted.	
9	<i>Page 6,</i> What do the colors in Figure 2 represent? There should be a legend explaining these.		Accepted. Figure 2 has been revised; the colors have been eliminated.	
10	<i>Page 6,</i> Pipeline, Siphon Tank, Cribs, and Trenches should be labeled for easy identification.		Accepted.	
11	<i>Page 9, Stand-alone sites rationale.</i> For Siphon Tank and pipeline it is stated that contaminant distribution would be higher in the soil column. Since there is no history of leaks, it should be expected for the soil column to have significantly lower levels of contaminants. Explain why this statement is made.		Statement has been revised to reflect that any contamination resulting from leaks, which have not been known to have occurred, would be much shallower (vs. "higher") in the soil column.	
12	<i>Page 10,</i> Estimate total amount of contaminants that will be removed under the different alternatives.		Accepted with modification; this information would fit better within the discussion of remedial alternatives beginning on page 15. Instead of quantities of contaminants removed, estimates of the fractions of contamination removed during each alternative will be stated.	
13	<i>Page 11, fourth bullet.</i> Describe and quantify "shallow zone." (i.e. 0 to 15 ft bgs.)		Accepted.	
14	<i>Page 11 &amp; 12, Land Use.</i> Change "industrial/exclusive zone" to "industrial zone" in this document or provide a reference and definition for "industrial / exclusive."		The land use description has been modified to depict an industrial-exclusive zone as defined by DOE/EIS-0222-F,	

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			<i>Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement</i> , and the ROD (64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement [HCP EIS]"). The zone depicted in the CLUP is located in the middle of the Central Plateau.	
15	<i>Page 11, Land Use.</i> Remove web link.		Accepted; link has been removed.	
16	<i>Page 12, Human Health Risk, first paragraph, last sentence.</i> Clarify exposure time of "a few hundred years."		Accepted; sentence has been revised to state "a few hundred hours".	
17	<i>Page 12, Human Health Risk, second paragraph, first sentence.</i> Add "if no action is taken" to the end of the sentence. It should also be noted that the groundwater in the BC area has not been impacted by Hanford activities.		Accepted.	
18	<i>Page 12, Human Health Risk, fourth paragraph, fourth sentence.</i> Change "humans are not protected" to "humans who come in contact with the waste are not protected."		Accepted.	
19	<i>Page 12, Human Health Risk.</i> Add a paragraph describing each scenario.		Accepted.	
20	<i>Page 13, Ecological Risk.</i> Add a paragraph explaining that biota are present in the BC Control Area.		Accepted.	
21	<i>Page 13, Second RAO.</i> Drop the word "further" from the RAO. At this point the GW under the BC Cribs is not impacted.		Accepted.	
22	<i>Page 14, Summary of Site Risks, First bullet.</i> 15 mrem/yr is consistent with the CERCLA acceptable risk range of $10^{-4}$ to $10^{-6}$		Accepted.	
23	<i>Page 15, Summary of Remedial Alternatives, First paragraph, third sentence.</i> Change "the Regulatory Agencies (Washington State Department of Ecology [Ecology] and EPA) have a" to read "of the."		Accepted.	
24	<i>Page 18, last sentence.</i> Add "as no cap would be needed." At the end.		Accepted.	
25	<i>Page 19, Compliance with ARARs, end of first paragraph.</i> Add "adjacent to waste site."		Accepted.	
26	<i>Page 21, End of first paragraph.</i> Clarify the high rating for Alternative 3 and moderate for Alternative 5.		Accepted. This sentence is intended to state that Alternatives 3 and 5 have high and moderate short-term environmental impacts, respectively, due to the quantities of borrow material required and areas affected.	
27	<i>Page 22, Cost; Third to last sentence.</i> Change "to satisfy waste acceptance criteria" to "worker protection."		Accepted.	

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28	Page 23, <i>Second bullet</i> . Update this area with the results from the focused feasibility study process and evaluation of the selection of soil desiccation as the preferred technology.		Accepted.	
29	Page 24, <i>End of third paragraph</i> . Change "EPA 15 mrem / yr standard" to "15 mrem /yr operational limit."		Accepted.	
30	Page 36, <i>Public Meetings</i> . Change "Dennis Faulk at (509) 376-8631" to "Rod Lobos at (509) 376-3749."		Accepted.	
31	Page 36, <i>Submitting Comments</i> . Change "712 Swift Boulevard, Suite 5" to "309 Bradley Blvd, Suite 115."		Accepted.	
32	Page 36, <i>Submitting Comments</i> . Change "faulk.dennis@epa.gov" to lobos.rod@epa.gov.		Accepted.	
33	Page 36, <i>Points of Contact</i> . Change "Dennis Faulk" "(509) 376-8631" to "Rod Lobos" "(509) 376-3749."		Accepted.	
1	<u>Focused Feasibility Study, General Comments</u> EPA disagrees with the preferred alternative of capping for the 216-B-20 through B-34 and 216-B-52 trenches. In our opinion, Alternative 5 provides the highest degree of overall protection of human health and the environment, reduces the risk from principal threat waste more effectively, and is consistent with stakeholder values as reflected in advice from the Hanford Advisory Board in advice # 63, #173 (the Central Plateau Remedial Action Values Flow Chart), and #174.		See response to Comment #1, Proposed Plan, General Comments.	
2	It is assumed that proposed excavated depths are from current ground surface elevations. If this is correct, a large amount of the proposed excavation will be "essentially clean." It is not clear if this was factored into worker dose as it relates to shielding and handling the soil. Please clarify.		Your assumption is correct. However, the worker dose estimate assumed that the soil was essentially "clean" from the surface to 11 ft bgs. Then the soil was contaminated to approximately 20 ft bgs, with the 11-15 ft region being highly contaminated. This band of contamination was assumed to not extend beyond the footprint of the trench bottom.	
3	The EPA disagrees with the preferred alternative (Alternative 4) capping for 216-B-14 through 216-B19 Cribs. EPA believes that (Alternative 5) is a more appropriate alternative. The streamlined characterization approach used for the six cribs creates uncertainty in the extensive assumptions that have to be accepted. Although the representative site chosen is a crib, there are many differences between it and the subject cribs which warrant characterization. The B-46 Crib is located north of the BY Tank Farm and is part of the BY Cribs, while the subject cribs are located south of the BY Tank Farm and are part of the BC Cribs and		See response to Comment #3, Proposed Plan, General Comments.	

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
	Trenches Area. Although the representative crib received the same waste stream for part of the time, it was not hooked up to the same pipeline and tank as the six subject cribs. It is also noted that the 216-B-46 Crib originally received wastes from 221-B (page 2-61), while the other cribs did not. Other notable differences between the B-46 Crib and the subject cribs are: contamination in the B-46 Crib starts below 15 feet of depth, while the contamination in the subject cribs are 10-13 feet deep; and the B-46 Crib has impacted groundwater and the six subject cribs have not. The selection of Alternative 5 would ease most of these concerns as contaminants can be monitored as the waste is removed, along with removing most of the higher concentrations of contaminants.			
4.	It is not clear as to why operating and maintenance costs associated with Alternative 5 for both (216-B-14 through 216-B-19 cribs) and (216-B-26 through 216-B-34 and 216-B-52 trenches) are more than for Alternative 4. It is not clear if cost projections include federal, state, and local government costs for administering the varying life of institutional controls. Intuitively a cap that has to perform at a higher level along with a longer period of institutional controls would have a higher cost. Please explain.		Accepted. While the estimates for operations and maintenance (O/M) presented are greater for Alternative 5 than for Alternative 4, they should be identical, because essentially the same cap will be constructed for each alternative, except for intrusion-deterrent features associated with the alternative 4 cap. O/M costs will be adjusted to show identical values.	
5	The construction methods for the various alternatives require using water for dust control, which has the potential to adversely impact mobile contaminants that have not reached groundwater. There should be a discussion as to which alternative would minimize the potential impact to groundwater. Naturally, one would assume most of the water used for dust suppression while excavating, would be removed from the waste site when the soil is disposed of in ERDF. Although both Alternatives 4 and 5 have "engineered barriers," one would deduce that the "engineered barrier" with the most layers and the greatest requirement for compaction and accompanying moisture may have a higher potential for mobilizing contaminants.		Most of the water used for dust control during excavation would be carried to the ERDF with the excavated soil. However, there is potential for some of this water to remain following excavation. Also, additional water may be added when borrow soil is added to the excavation prior to constructing the cap, to ensure proper compaction of the soil beneath the cap. Thus, Alternative 5 may introduce more water into the vadose zone. Because the caps used for Alternatives 4 and 5 are expected to be identical except for the intrusion-deterrent layer associated with Alternative 4, each cap would probably contain the same quantity of "extra" water. No change to the text is necessary.	
6	It is unclear as to why Alternative 5 "does not meet criteria" for short-term effectiveness as shown in Table 8-1 and 8-3. Please explain.		Alternative 5 does not meet criteria, because it would present an unreasonable remediation worker risk beyond the potential environmental benefit. One way of defining unacceptable worker risk would be to compare predicted doses with administrative dose limits. For example, the project administrative limit defined by the PHMC RadCon manual is 500 mrem/yr and the DOE administrative limit is 2000 mrem/yr. The Alternative 5 cost estimate assumptions (Appendix D, Section D3.5.1) describe overburden excavation being performed by three 4-person crews and contaminated soil excavation being performed by four 4-person crews. Air	



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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
			and soil sampling require another 4 persons. ERDF container surveys and sealing of the liner require another 5 persons. Finally, 12 drivers are needed. Total workforce is then approximately 50 persons, not counting the personnel located at ERDF. If the excavation portion of the remediation is accomplished in a year, the average dose would be about 1 rem/person (based on 49 person-rem to workers employing ALARA principles for non-ERDF work). Because this is an average dose, some would undoubtedly receive more. Although these doses might be considered reasonable because they are less than the DOE administrative limit, just by exceeding the project limit puts them beyond what should be planned. No change to the text is deemed necessary.	
7	It is unclear why remedial worker dose is deemed as "considerable worker risk." It is stated in the FFS that, "Radiological controls can readily be applied to the excavation process to limit the expected human dose." (page f-38). The projected collective dose for protected remedial workers is 76 person-rem for (Alternative 3) complete RTD, intuitively (Alternative 5) near-surface excavation would be somewhat less. It is expressed in the FFS that approximately 36% of the remedial worker dose is at ERDF. The secondary waste acceptance criteria for ERDF include radiological control-based criteria (limits on smearable alpha and beta, limits on total dose at 1 ft, etc.). These limits are for worker protection. If a project ships waste that meets these criteria, no unacceptable exposures to ERDF employees should occur. If one is confident in the worker safety controls at ERDF, the 76 person-rem estimate can be reduced to less than 49 person-rem for all the work excluding ERDF. It is understood that partial excavation and capping would take approximately 2.6 years to complete. If one takes into account the length of time it takes to complete the project, it would yield less than 19 person-rem/yr. Evaluating the total expected worker received dose (except ERDF) of 19 person-rem/yr to the DOE whole body dose limit of 5 rem/year for each worker or the DOE Administrative Control Level of 2 rem/year for each worker, the remedial worker expected dose seems minimal. Please explain why the remedial worker risk is described as considerable.		<p>Accepted. The protected remedial worker dose is slightly less for Alternative 5 than for Alternative 3. Appendix F shows that the protected worker dose associated with removal of the "high activity soil layer" is 97.0% of the total dose. Because of the overall uncertainty associated with the calculations, this distinction was considered to be negligible. This information will be added, however.</p> <p>There are appropriate worker safety controls at the ERDF, but the dose incurred there would still be elective and elevated more than routine operations.</p> <p>Alternative 4 durations are about 2/3 of the times required for Alternative 5. Thus, the duration component for the Alternative 5 excavation is estimated at about 1/3 of the overall remediation time. This translates to approximately 10.4 months for the Alternative 5 excavation. Then, the 49 person-rem would be incurred in a single year. This is a considerable dose to manage to ensure that no administrative limits are challenged. See response to #6, above.</p>	
1	<p><u>Focused Feasibility Study, Specific Comments</u></p> <p>Page 2-36, Deep Zone Groundwater Protection. It appears the STOMP modeling was performed using a point calculation (i.e. contaminants modeled as they immediately hit groundwater). Traditionally groundwater risks are calculated by extracting groundwater from a screened well adjacent to the waste site. Calculating</p>		Accepted. Additional STOMP modeling that evaluates groundwater extracted from a screened well adjacent the waste sites will be included.	

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
	the groundwater risk pathway by this method more accurately represents the risk to human health from consuming groundwater. Recommend the modeling be expanded to run this additional scenario.			
2	<i>Page 2-38, Section 2.7.3 second paragraph.</i> For comparison purposes EPA suggests listing the intruder dose limits from DOE Order 435.1 of 100 mrem/yr chronic and 500 mrem/yr acute. Suggest this information be carried through the intruder scenario discussion.		Accepted.	
3	<i>Page 2-40, Section 2.7.4.3.</i> It is not clear how analogous B-46 is to B-14 through B-19 Cribs. Please clarify the expected depths to contamination in the B-14 through B-19 Cribs and how this might change the risk profile.		The bottoms of the B-14 Series Cribs are approximately 5 ft shallower than the 216-B-46 Crib. This difference is illuminated in discussion of the applicability of this site to the B-14 Series Cribs in Section 2.6.2.3. For the baseline case, i.e., no remedial action taken, the B-14 Series Cribs present an obvious human health risk, in contrast to the 216-B-46 Crib, because the depth to contamination is estimated at about 12 ft. The differences with the 216-B-46 Crib are explicitly described in Section 2.6.2.3. Section 2.7.4.3 discusses how the risks associated with 216-B-46 are translated to the analogous 216-B-14 Series Cribs. No change to the text is necessary.	
4	<i>Pages 2-61 through 2-74, Table 2-2.</i> The table uses two sets of numbers one set is in parenthesis. Please label and explain.		Footnote at the end of the table provides this information: "( ) values in parentheses are from the Soil Inventory Model, 2004." No change to the text is necessary.	
5	<i>Pages 2-69, Table 2-2, 216-B-30, Rationale.</i> The table states "site construction is identical to the 216-B-46 Crib." It should read "site construction is identical to the 216-B-26 Trench."		Accepted.	
6	<i>Page 3-10, Section 3.5.3.</i> Drop the words "to be conservative" not exceeding MCLs is what is required by regulation.		Accepted with modification. As stated, the sentence describes the conservatism regarding the point of compliance. Because calculations are being revised to reflect an updated point of compliance focused on a screened well adjacent the waste sites, this sentence will change accordingly: "PRGs were calculated on the basis that extracted groundwater would not exceed MCLs."	
7	<i>Page 3-14, Table 3-2.</i> Please clarify the purpose of footnotes g, h & j.		These footnotes relate the PRGs to specific sampled sites. Indication of Pu-239/240 as being related to 216-B-46 is an error - it should be shown as applying to all of the sites, including the 216-B-53A Trench, which used to be considered a TRU waste site. Further consideration of having different PRGs for different groupings of waste sites leads to the conclusion that the 216-B-46 Crib and 216-B-26 Trench should be grouped, because they received the same waste stream, and	

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
			the 216-B-58 grouping should be separate, because it represents an entirely different waste stream. The text will be changed to reflect the above statement.	
8	Page 4-12, Section 4.2.2.5 EPA disagrees with adding this tank to the Z-361 action. Please remove this statement.		Accepted although RL maintains that remediating this tank with similar tanks is cost efficient. Statement that the Z-361 EE/CA will be amended will be deleted.	
9	Page 6-28, 216-B-58 Trench. It is not clear why this alternative is not applicable. It seems likely that due to the geographic proximity to the other sites one cap would be installed over the entire area; thus these sites by default would fall under Alternative 5.		RL disagrees that this site and analogous sites should default to Alternative 5, because none of these sites possess the contaminant distribution model that makes this alternative appropriate. See response to Comment #5, Proposed Plan, General Comments.	
10	Page 7-1, Section 7.1.1, 1 <sup>st</sup> paragraph. It is not clear why Alternative 4 capping is the most protective (of human health and the environment). Intuitively Alternative 3 or 5 should be more protective as contaminants are removed from the waste sites. Please clarify.		The primary argument is that Alternative 4 effectively balances the human health risk associated with the potential inadvertent intruder into the contamination against the certain risk to remediation workers represented by excavating the contamination. Capping recognizes that this intruder risk would disappear in the time frame that institutional controls would be in place to ensure continued groundwater protection. Also, Alternative 4 is more protective of the environment, because it causes the least disruption of the landscape by requiring the least borrow soil. No change to the text is necessary.	
11	Page 8-1, Section 8.1.1. EPA disagrees with the preferred alternative of capping for the 216-B-20 through B-34 and 216-B-52 trenches. In our opinion, Alternative 5 provides the highest degree of overall protection of human health and the environment reduces the risk from principal threat waste more effectively, and is consistent with stakeholder values as reflected in advice from the Hanford Advisory Board in advice # 63 (institutional controls on the Hanford site), #173 (the Central Plateau Remedial Action Values Flow Chart), and #174.		See response to Comment #1, Proposed Plan, General Comments.	
12	Page 8.2, Section 8.1.2 As discussed earlier for 216-B-58 and its associated sites, Alternative 5 seems more appropriate than Alternative 3 as the cap would cover the area.		See response to Comment #5, Proposed Plan; General Comments.	
13	Page 8-2, Section 8.1.3 As outlined in comment 10. EPA believes Alternative 5 is more appropriate for waste sites 216-B-14 through 216-B-19.		See response to Comment #1, Proposed Plan, General Comments.	
14	Page 8-3, Section 8.1.4, Second paragraph. This paragraph should be updated to reflect findings from the independent technical review since it has already been conducted.		Accepted.	
15	Page B-11, MTCA. The rational column for MTCA should be changed from relevant & appropriate to applicable since these regulations are used to establish		RL continues to take the position that the language of CERCLA Section 120 does not waive sovereign immunity	

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	PRGs. In all other decisions, 173-340 had been applicable, not relevant & appropriate. Same comment applies to WAC 173-350.		from enforcement of state cleanup laws. RL believes that Section 120 requires federal agencies to comply with substantive provisions of state cleanup laws to the extent such provisions are determined to be ARAR to the contemplated action(s). There are still unresolved issues regarding the extent the federal government has waived its sovereign immunity under Section 120. Therefore, although we agree to address substantive provisions for MTCA in this remedial action, it is the RL position that such provisions are only considered relevant and appropriate in the context of CERCLA requirements.	
16	Page D-1, D2.0, update highlighted area.		Accepted.	
17	Page F-1, Section F1.2 Change the word "meager" to "limited."		Accepted.	
18	Input parameters for groundwater modeling needs to be included in the appendix.		Accepted.	

Mr. Nicholas Ceto  
05-AMCP-0406

-2-

SEP 08 2005

cc w/attach:

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